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NO. 12.

## WHERE ART THOU?

BY A LADY.

Oh, where art thou, my life, my love,  
This grand, this solemn night?  
My thoughts are with thee, as I rove  
Beneath the moon's pure light.  
Bright clouds upon the fitful wind,  
On wandering pinions stray;  
I watched them with an absent mind—  
For thou art far away!

Where art thou, love? The night is fair,  
And soft the breezes blow;  
And many a holy, watchful star,  
Looks down with fervent glow.  
I raise my eyes to Heaven above;  
I lift my hands to pray;  
Devotion dies, in bleeding love—  
For thou art far away.

Within thy bosom lies my heart,  
I am but one with thee;  
My soul is with thee where thou art,  
And what is left of me?  
I sigh, the wind that sigh returns,  
As ripe leaves rustling play;  
But beauty dies, my spirit mourns—  
For thou art far away.

Oh, where art thou? And what am I?  
What means this bosom's swell?  
The trembling heart, the blush, the sigh;  
Ah me! I know too well!  
Too well, I know, that I am thine,  
And doom'd from thee to stray,  
Ten thousand torturing thoughts combine—  
For thou art far away.

Oh, where art thou, my life, my love—  
Where smile thy beaming eyes?  
Are they not rais'd like mine above,  
Where love immortal lies?  
Oh, meet me there, with ardent heart,  
At every close of day;  
Until we meet no more to part—  
Where peace and rapture stay.

## THE DIRGE OF THE MARINER.

BY H. T. TUCKERMAN.

I ask not to sleep where the ancient church-bell  
Will fright the young birds from my grave—  
More dear than its chime is the requiem swell,  
And musical moan of the wave:  
Let not the frail herbage grow over my bones,  
Which the winter-gale covers with snow;  
O! bury me not where memorial stones,  
Earth's chronicled sepulchres show.  
But place me away where the curlews sweep  
Round the Ocean's unlaurelled goal;  
On the sparkling beach, where the surges sleep,  
And the waters forget to roll:

I have lived on its mighty and solemn breast,  
And I love it far more than land;  
O! when I am dead, let my ashes rest  
Entombed on the weltering strand!

For there the green billows with chaplets of foam  
Will come from the midst of the sea,  
Like friends from the haunts of my ocean-home,  
To utter their sorrow for me;  
They will bring gay weeds from the fathomless caves  
And twine them above my head,  
And the ambient gleam of the distant waves  
They will cast on my lonely bed.

With shells like the rainbow, and pebbles rare  
They'll enamel the polished strand,  
And the signs of their faithful vigils there  
Will be traced on the silver sand.  
Sadly the sound of their mournful retreat  
In the distance will die away,  
And wildly the sobs of their coming will greet  
The home of the mariner's clay.

They'll haste on the wings of the tempest, to wail,  
Or under the starlight, to sigh;  
They'll throng like an army its chieftain to hail,  
Or meekly creep thither to die.  
Let my slab be inscribed by the radiant wave,  
My shroud be enwove from the surge,  
Let no tears but the spray wet the mariner's grave,  
And the sea sound forever his dirge!

## OUR NAVY.

[We present below another article from our correspondent H. B., whose previous papers upon naval subjects, we have taken occasion to commend to the notice of our readers. We invite their special attention to the following essay. While we hope that every contribution that finds admission into the columns of the Messenger will be worthy of their regard, and each, after its manner, contribute its quota to their amusement and instruction, we deem the subject that is discussed below, as having a strong claim independent of its great literary merit—nay, as laying, by the deep considerations of patriotism and duty, a requirement upon each one to whom the interests and honor of his country are dear, to study, to reflect and to act.]

We would that the sword were sheathed—that the standard of battle were furled forever. But such is not the case. We are yet exposed to the perils of conflict, and that with mighty nations. Dark clouds are gathering in the horizon, that threaten every moment to burst, and to involve us in the consequences. In the event of such a crisis, can any one doubt that it is to our Navy we must look as our strongest arm of defence? that Navy that has won for us so many laurels upon Lake and Sea, and beneath whose bunting has cowered even the Red-Cross of Saint-George? But is this agent of national defence in a condition to meet such an exigency? This is an important question, and for an answer let the reader look to the following and the preceding articles from the masterly pen of our correspondent. We assure them that it is a pen fully capable of discussing this question.

The plan for a *Corps of Reserve*, proposed for the Navy, is believed to be wholly original. We can only say, read and act upon the important suggestions therein contained. Let it be remembered, *if war should come, we must look to the merchant service*, not only for men, but for officers for our Navy. And what shall be the qualifications of these officers? Shall they have all the advantages of a training in the school-ship, as proposed below, or shall they rush totally unprepared to the quarter-deck, and be called from the quiet routine of commercial prosperity, to "stand to their guns, and be ready?"

But, the school-ship appears to be almost as important to the interests of our country in peace, as in war. *Let Marine Insurance Companies* attend to the valuable suggestions which they will find in this paper, relative to the increased safety in the navigation of merchant-ships, which would flow from the employment of commanders well educated in the naval school-ship. But we will not detain the reader. Once more we respectfully yet earnestly request all to study this paper. Would that it could be spread before the eyes of the whole country!

The pen that has performed this labor, is wielded by one deeply informed as to the subjects upon which he writes—by one interested, as every true sailor must be, in aught that concerns the firesides of mothers and sisters, the proud flag that floats over him, and "the wooden walls" of his country.]-*Ed. Mess.*

## SCRAPS FROM THE LUCKY BAG.

No. III.

### DETAILS OF THE SCHOOL-SHIP.

France, England, and Russia, nay, even the Grand Turk himself, Mr. Editor, has his Naval School. These schools, though severally conducted under different systems, agree, nevertheless, in this one principle; viz:—that the proper teachers for officers, are officers. This principle is well known, and forms a striking feature in all military institutions. Divest the faculty at West Point of its military character, and what think you would be the state of discipline, and consequently, the national advantages, of that institution? Disrobe the chairs at Brienne and at Woolwich, of their military cloaks, and what kind of soldiers, let me ask, would have been turned out upon the field to manœuvre the armies of France and of England? In the schools of *homoeopathy*, the dogma is, that "like cures like." And this dogma reversed, becomes the doctrine which is every where preached, that, in normal schools, like begets like. Would you, Mr. Editor, have a surgeon to teach sculpture; or a lawyer medicine? Neither, sir, would I have a landsman to teach a sailor the way of his ship over the sea; nor a citizen, from the walks of private life, to direct the education of officers for the Navy. Give me for that your old sea-dog, whose mind is well stored with professional lore—who can instruct the Reefer in the art of doing things "ship-shape and Bristol fashion," as well as "according to Gunter, and in man-o'-war style,"—who can introduce the discipline and etiquette of the quarter deck into the school-room—one who, in the course of instruction, can impart to the Mid-

shipman all the pride and feelings of the officer—excite him to noble emulation, and imbue him with the spirit of a sailor; so that the young aspirant, ere ever he has tasted salt-water, can imagine himself almost 'web-footed;' and, when domiciliated in his ocean-home, feel that he is indeed on his element. Such, sir, should be the teachers for our little School-ship.

It was remarked by the sailor-king of England, William IV., that the best school for educating gentlemen, is the quarter deck of a man-of-war. Change the present system, so as to introduce the discipline of the quarter deck below hatches, that it may be felt in the school-room, and the fact would soon become obvious, that the best school for training up sailors, and officers, and gentlemen, would be the little man-of-war school-ship of the Americans.

Under the present arrangement, the duties of the school-room, when one is to be found on board of a man-of-war, are subordinate to every other duty in the ship. There, the Midshipman is practically taught to consider his attendance at school, as the matter of the least importance in his routine of duties. He is interrupted at his lessons to go on shore for the Captain's pig; or he is called from recitation, to count the duck-frocks and trowsers contained in the wardrobe of Tom Brown, the sailor. I have known a Captain, who forbade the Midshipman to "work out longitude," on the ground that it was a secret of the Captain and Master; and, therefore, it was exceedingly officious, and unbecoming the character of gentlemen, for Midshipmen to be prying into the rate and error of the chronometer, or to have any thing to do with the longitude.

If you reflect that all the authority, on board of a man-of-war, is in the hands of the Captain and Lieutenants—that the school-room, even when one is tolerated, is too often made the pretext, by many Midshipmen, for avoiding duty on deck, or elsewhere,—you may understand why the school-room is by no means considered in the light of a subsidiary to the discipline of the ship; but quite the contrary. Discipline is always, and deservedly so, a matter of the first importance on board a man-of-war. Upon it is based the efficiency of the ship, and even the safety of men and officers. On the Captain and Lieutenants depends a proper state of discipline, and they are held responsible for it. Discipline can only be maintained, by requiring from every one a prompt and ready response to the calls of ship's duties. And whenever, not heeding such calls, the luckless Reefer urges for excuse his attendance in the school-room, the school-room is considered as a bore, and from that moment is looked upon too much in the light of a skulking place for lazy Midshipmen. Hence it is considered by no means discreditable to the Midshipman never to be seen in the school-room; and many

make it a matter of pride, never to enter there. Every officer is so fully convinced of the futility of attempting to teach Midshipmen under present arrangements, that there is no one to take any interest in the matter. Even the professors themselves, when they come to understand the difficulties in their way, "go through the motions" of their *duty*, merely for form's sake—conscious that they labor in vain.

Education is a matter of primary importance, and it must be treated as such, else it will never flourish. That any school, either ashore or afloat, should prosper, among other requisites it is an essential one, that the duties of the school-room should be of paramount importance. Hence, you may readily enough perceive, how that, education can never flourish under any system of instruction on board of one of our public vessels, where every thing is made to bend to the man-of-war—where the reefing of a topsail, the crossing of a yard, or the cleaning of a cutlass, is made a matter of more importance than the demonstration of every proposition in the six books of Euclid.

For this reason, I would set apart one of the idle ships in the Navy for a school-ship. On board of that ship, the duties of the school should be paramount to all others,—that is, she should be *first* a school-ship, and then the man-of-war. Every officer on board—Purser, Chaplain, Master, Surgeon, Lieutenant and Commander,—every one, should have a chair assigned him, and take part in the duties and management of the school. The Captain should be tactician, and, ex-officio, the President. Him I would hold responsible for the condition of the school-ship, and the proper management of the school, as he is now for the discipline and efficiency of a man-of-war. The Chaplain should instruct in Languages; the Purser, in Gymnastics; the Master, in Drawing and Naval Architecture; the Surgeon, in Chemistry and Natural History; and the Lieutenants, in Mathematics, Astronomy, Natural Philosophy, Navigation, &c.

I have assigned languages to the Chaplain, because his clerical character presupposes him learned in the *dead languages*; but I would none of them, Mr. Editor; the *useful, practical*, living languages, I advocate; first, that most difficult, arbitrary, and useful of all languages, the English; and after this, your French, or German, or Spanish. The study of languages constituting an important part in the education of a clergyman, it would appear that the duties of Linguist in the school-ship, might be more appropriately assigned to the Chaplain, than to the officers of any other grade in the Navy.

Gymnastics—particularly that department which includes the cunning art of fence, and the sailor's amusement of "single sticks"—I have assigned to the Purser; not from any peculiar qualifications which the officers of that grade are supposed to

possess in this respect. It is not enough that the Navy officer should understand the use of the weapon at his side, merely for his own sake. But when he goes to sea, he will find that "his division" would be doubly strong, if, in boarding and repelling boarders, they understand the broad sword. He should be prepared not only to set them the example, but qualified to instruct them in the skilful use of the arms that are put in their hands. Therefore some officer should have especial charge of this department; and, if in the economy of the organization, it were not deemed expedient to raise the science of the sword to the dignity of a chair, I would assign gymnastics, including fencing, to the Gunner; and the Purser might take some other chair for which he is better qualified,—international and maritime jurisprudence for instance. If that grade, in its present numbers, would afford no one properly qualified to fill such a chair; let it, with a Purser's commission, be tendered to some one, ably competent, in civil life. I would make a similar tender of a Master's commission to a Naval Architect and Draftsman.

The twenty thousand dollars annually wasted under the present system, on professors of mathematics in the Navy, if added to the pay, as Navy officers, of the professors of the school-ship, would make the salary of these more than sufficient to command for the faculty, the best talents the country can afford. Every professor should be a regularly commissioned officer of the Navy—thereby placing him under military law, subjecting him to the rules and regulations of the Navy—identifying him with the service, the more effectually to secure his interest in the school, and more surely to enable him to impart the proper *esprit du corps* to his pupils.

I assign the chair of Chemistry to the Surgeon, because the Navy affords many officers of that grade, who could fill either that chair, or the chair of Natural History, and of Philosophy, or the three, with great ability. It is an important item in the economy of the school-ship arrangement, that no branch of science should, ex-officio, attach to an officer of any particular grade. As Professors, they should be all equal; one chair should be as important as another, whether filled by the highest or the lowest officer on board. But, as officers of the ship, every one should enjoy his appropriate rank.

Officers on board of such a ship, who have nothing to do with the school, would be like misplaced lenses in a telescope. There should be none to interrupt, or to confuse; but all should be engaged in the business of teaching, that the powers of all might be concentrated upon the one great object. Therefore you will observe that I have multiplied chairs, and distributed more professorships than under other circumstances might be thought judicious. But you will see sufficient

reason for this, when you consider, that one important feature of the school-ship is to train up the young officer with proper ideas of the discipline on board of a man-of-war. Therefore, have all the officers on board of that ship, upon whom that discipline is to operate, and who have their part to perform in maintaining it; that the pupil may see it in all its bearings, and have continually before him a practical illustration of the wholesome effects—of the efficiency and strength—which a well regulated system of discipline imparts to the man-of-war.

Take for your school-ship one of our 74's that are rotting at their moorings—for a ship in ordinary decays as rapidly as a house without a tenant; and the putting of one of these in commission for a school-ship would be an actual saving in arresting the progress of decay by means of more perfect ventilation and frequent cleaning of the ship. But if a 74, or a frigate may not be had, the Navy will be content with a sloop-of-war, having simply a light deck thrown over her, and being lightly sparred and rigged, that the Midshipmen may be taught to hand and reef; and, in her annual cruise of two months at sea, constitute her crew proper.

Besides cooks and servants for the table, there should be on board ten or fifteen good seamen, as 'a stand by.' The Midshipmen of the school should have an appropriate uniform, allowing free exercise and use of the limbs and muscles. They should be practised frequently at handing and reefing, at making and taking in sail, sending up and down top-gallant-yards, and the like. Every one should take care of his own hammock. They should, for the benefit of the exercise, and for other purposes, take frequent excursions in row-boats and in sail-boats, always their own oarsmen.

Those who were the best sailors, should be rated as captains of tops and other petty officers; those who were first in gunnery, as gunner's mates, &c.; and those who stood highest in their several classes, should be rated as master's mates; and thus an incentive would be created, and an inducement held out, for calling into existence, and for bringing forth, every quality that is becoming in the sailor or is graceful in the officer. If the Navy were increased, as I have shown it ought to be, so as to allow a full complement of officers for every ship, the number of pupils in the school-ship, required merely to fill *vacancies in the Navy*, would be about one hundred and fifty—supposing the period for graduating to be three years. This estimate is made on the supposition, that the admissions of each year would be lessened by fifteen, previous to graduation; and that the remaining number, in the course of three years at sea, would be attended with a still further reduction; leaving about thirty to fill the vacancies that annually would occur in the list of Lieutenants, from deaths, resignations, dismissals and promotions: But if

the school-ship were to cruise at sea two months in every year, the scholastic term might, with great advantage, be extended to four years; after which, a cruise of two years at sea, should entitle the graduate to an examination in seamanship alone; on which, if found qualified, he should be passed and promoted. Under such a system, Mr. Editor, you would see the service invigorated with young officers. We should then have boys for Midshipmen and young men for Lieutenants. You would no longer see gray headed Midshipmen; or superannuated grand-papas, for young officers.

In this age of discovery, of invention and improvement, Mr. Editor; when nautical skill, geodetic operations, and every problem of science in whatever branch with which the mariner has to do, have been reduced to exact rules, or the process of solution greatly simplified, it is no longer a matter of choice whether the rising generation of our Navy officers shall be properly educated or not. It will not do now for the navigator, when asked to point out the place of his ship at sea, to slap his out-spread hand down upon the chart—and say, *there*. His place on that chart is a point; and as such he must designate and mark it. A ready solution of the long-sought problem of longitude has been obtained; our means of observation have been multiplied; and new data have been afforded to us, by which latitude, as well as longitude, may be determined. Invention, discovery and improvement are daily adding to the navigator's resources; and every officer should be familiar with the principles involved in each and every process by which longitude, latitude, or magnetic forces, may be determined; whether that process be simple or complicated. Before the facilities of the present day were known, many sought in vain to devise the means of procuring an artificial horizon at sea, as an adjuvant of longitude—yet a desideratum. Swinging chairs and hanging tables were proposed and tried, without success. But the most ingeniously impracticable method for the purpose originated with a Frenchman, who thought to accomplish the object, by fixing a circular mirror on the crown of a top, and spinning it on the deck of a ship at sea.

Magnetism too has been called on to aid in the solution of the grand problem of terrestrial longitude. Variation charts were constructed at a very early day. But modern improvements have invested this science, hitherto but little understood, with a new importance, and given it an interest which it never before possessed. As an auxiliary in the development of the laws of magnetism, charts have been also constructed to show the lines of equal inclination and intensity, as well as of variation. These lines, apparently of fanciful convolutions, and of arbitrary course and flexure, are found on examination to be governed by fixed principles; whether under the form of lunes, as-

symptotes, lemniscates, or circles; or in the many "variations of conjugate oval, cusp, and node, in which the geometry of curves luxuriates," they are the exponents of magnetic quantities, regulated by mathematical rule, in obedience to certain laws of physics, which present research is seeking more fully to investigate. In his *magnetic storms*, Humboldt, a few years ago, discovered a new principle in magnetism, which, when properly investigated and fully understood, may lead to most important results; affording the means of determining longitude with an accuracy hitherto unknown. It is impossible to calculate the bearings on the economy of mankind, which the discovery of any new principle in physics is destined to have, however trifling that principle may appear when first revealed. The fall of an apple, and the motion of a frog's leg in the kitchen of a philosopher, have led to the most important results, and given powers to man, the extent and value of which, though already great, are not yet fully developed. The discovery of Humboldt has revealed, in the cosmical circulation of the magnetic fluid, the existence of a *pulse*, which is found to be synchronous in its action over all parts of the world where observation has as yet been directed to the subject. The beats occur at intervals, and, acting simultaneously on the needle every where, this discovery may constitute a natural telegraph, in perpetual operation, for the communication of longitude. Impressed with a sense of the importance with which this science has thus been invested, the Pacha of Egypt, and the semi-barbarous Rajah of a Hindoo province,\* in concert with England, Russia, Belgium, Austria, Prussia and Bavaria, joined by a few private citizens of America, are at this time engaged in conducting a grand series of magnetic observations; of which Gottingen is the centre,—the out-skirts reaching from Siberia to a voyage of circumpolar navigation in the Antarctic ocean. With such an impulse and under such auspices, the laborers are already clearing away the rubbish in this branch of knowledge. The work of a few years past is throwing down the rude scaffolding of former theorists; and in its place something is seen rising up, like the pillar and spire of a less fanciful edifice, having the rigid but beautiful proportions of an exact science. Yet a course of magnetism constitutes no part of the professional education of the American Navy officer. The Midshipman, who seeks to become learned in the branches of science that pertain to his profession, and who, before the Examining Board, should so far stray from the lids of Bowditch, as to get among the isodynamic and other lines of a magnetic chart, would be black-balled as certainly as though he were to club-haul a ship for the Board in the Hebrew tongue. Such is the present system, that the young officer finds but

few incentives, and no official inducements, to undertake an extensive course of professional studies.

If you will examine the records of a mad-house among any commercial people, of little more than a half a century ago, you will find there frequent instances of men who had cracked their heads upon 'longitude at sea.' Large rewards, both by governments and individuals, were offered for the practical solution of this problem. It was even classed by some with perpetual motion and the quadrature of the circle. Yet, now that it is understood, it is quite as easy for the scientific navigator to ascertain the longitude of his ship, as it was to resolve Columbus' problem of the egg, after the demonstration. And in these days, the wonder is, not how the solution of the problem for finding longitude was discovered, but how it remained hidden so long,—so obvious and so palpable were the means of the *quasitum*. The whole secret of the matter consists in knowing the difference between the time of day at the ship and at any other place. And—borrowing an idea from the beautiful simile of Dr. Wollaston—the moon is the hand of a great clock, placed by God in the sky, for this purpose. Therefore, he who can tell the time by the celestial clock, knows the longitude of his ship.

Another method, more simple, but less infallible and therefore not so beautiful, for determining longitude, is found in the substitution of a watch in the cabin of the ship, for "the great Greenwich clock in the sky." This watch is set by Greenwich time, and, supposing it to run correctly, always shows the true time at the Royal Observatory. Then all that remains to be done for finding longitude, is to tell the time of day by observation at the ship. But how can the place of a ship at sea be known, by reflecting the sun in a little mirror, and bringing its image to the horizon? Or how can it be discovered, by looking through a brass tube at the moon, and moving an index along the arch of a sextant? What, it may be asked by those unacquainted with the principles, have the sun and moon in the sky, or those things in the sextant, to do with a ship on the ocean? When told of Augmentation, Semidiameter, Dip, Parallax and Refraction; of the Equation of time, of Horary angles, Azimuth circles and Zenith distances, Right Ascension and Declination; of the inclination of the orbit of the earth, and of the focii and conjugate axes of an ellipse, &c.—and when the spherical principles involved in the calculations, are mentioned, the catholic proposition, the circular parts, the product of Radius and "middle part's sine," extremes conjunct and disjunct, and the final process of  $x - y = \&c.$ , the young officer uninstructed in mathematics, becomes dispirited at the difficulties in the way of *his* understanding the lunar problem. There is no one to encourage, or to expound to him the analytical symbols of Algebra, and to guide him among the mystic circles

\* Lond. Qr. Review. No. CXXXI.

of the sphere; hence, many a time, the energies of his young mind "are turned awry, and lose the name of action." Therefore, without knowing whether the *data* and *quasita* of the lunar problem, be arcs or angles, it is often, very, very often, the case, that Midshipmen, turning to Bowditch, commit to memory the formula of his first or second method for "finding the longitude at sea by a lunar observation." Thus crammed, or "drilled," as it is called, they go before the Board of Examination, where, strange to say, there is a premium offered for such qualifications. He who repeats "by heart" the rules of Bowditch, though he does not understand the mathematical principles involved in one of them, obtains a higher number from the Board, than he who, skilled in mathematics, goes up to the black board, and drawing his diagram, can demonstrate every problem in navigation. And, as merely to pass is the great object with many, you may well imagine how low the standard of mathematical attainments is thus brought, under the present system.

I once had a friend who possessed considerable attainments in mathematics. Therefore he cared not to commit to memory the rule for working any mathematical problem, but took pleasure in solving each of the various problems in navigation, according to the strict principles of mathematics. He thought to gain credit for those attainments, and relied on them to carry him safely through this branch before the Board of Examiners. When put upon his examination for promotion, and questioned as to the Lunar problem, he pretended ignorance of the 1st and 2nd methods of Bowditch, which, in those days, the candidates were merely required to repeat by rote: but, stepping up to the black board, he drew the diagram, and proceeded to treat the problem as a proposition in spherical trigonometry. The mathematical examiner floundered in the midst of the demonstration, the midshipman insisted; and they appealed to the Board. But no one of these being capable of judging between them, my friend was unanimously voted wrong, in spite of a mathematical truth. One of the members rose from his seat, and, with a magnificent air, advised the poor fellow to go to sea and study his profession. A knowledge of mathematics, like the legacy to Dickens' Cobbler, had "almost worked his destruction." It proved a rock on which he struck, and had well nigh 'bilged,' for he found that by differing with those 'potent signors' he was kept out of promotion for nearly two years. However, when the merits and qualifications of those who had appeared before the Board were made known, he had the satisfaction of finding, that though he himself had not been considered well qualified to pass, he had proved a most excellent teacher; for all those whom he had drilled, passed high upon the list and with great eclat. Therefore, Mr. Editor, if you have any young friend in

the Navy, preparing for the ordeal of examination, advise him to adhere to the rules as they are laid down in Bowditch,—to commit them to *memory*, and not to attempt to *understand* the mathematical principles on which they are founded, for such information will profit him nothing under the present system.

In Lord Anson's time, less than one hundred years ago, the only means of ascertaining longitude at sea was by the "log," which is a chip thrown over board with a string tied to it. By it is told the rate at which the ship is going through the water, but not over the bottom. It was then no uncommon thing for the reckoning to be  $15^{\circ}$  or  $20^{\circ}$  out of the way. I have myself seen those who kept 'Dead Reckoning,' *reckon* their ship on top of the Andes. Lord Anson, when navigators had not the facilities which are now afforded for correcting Dead Reckoning, came near running his ship ashore at Tierra del Fuego, though he thought himself  $9^{\circ}$  or  $10^{\circ}$  to the westward of it. And one of the ships of his squadron actually made the land on the side of the continent, opposite to the side on which he judged himself to be. And since Cook's time, which is much later, an error has been discovered in the means then afforded of finding longitude by lunar observations, which produced an error of thirty miles in the longitude.

Although the mathematical solution of this problem requires the simple addition of but eight logarithms, division by 2, and the subtraction of one logarithm to give the true lunar distance, wise men and astronomers have tortured their brains in search of a process for finding longitude at sea, less operose and more practicable than this. And there are now outstanding large rewards, proffered by one or more societies in England, for the discovery of some such method. Both governments and societies have acted unphilosophically in this respect. They have attempted to rob the science of navigation of its charms, by seeking to strip from it the attributes of intellect, placing it thereby on a level with the capacity of the unlettered mass of mariners. That these efforts have been attended with success, to a certain degree, is true. But how far the science of navigation has been advanced, or the safe conduct of ships promoted, by making the solution of most problems in the science a mechanical, instead of an intellectual, operation, let others determine. For the sake of dispensing with the use of one or two logarithms more, in the solution of the lunar problem, to intrust a long rule to the memory, at the expense of the understanding, may sometimes be of individual advantage; but it is doubtful whether it has resulted in giving that nicety to the calculations of the navigator, which the knowledge necessary to a proper mathematical solution is sure to impart. Therefore it may be considered very problematical, whether the world in general, and navy officers in particular, have

been benefitted by this 'simplifying process.' If, instead of such measures, steps with the same zeal had been taken for the diffusion of knowledge among seamen, so as to raise among them the standard of attainments for the navigator—placing him thereby on a level with the science of his art—this problem would long ago have ceased to be considered difficult and tedious; and then the philanthropic end for which the rewards were offered, would have been more than accomplished. For as it now is, an expert navigator—one who is accustomed to the logarithmic solution of mathematical problems—can perform the whole operation in ten minutes; and there remain to him, beside, all the collateral advantages of his mathematical attainments derived in the necessary course of previous instruction.

The process of finding longitude by chronometer is less tedious and more simple. It has been brought to its highest perfection in our own day. It *supposes* the chronometer to run at a previously established and uniform rate, during the longest passages at sea. Therefore, though the structure of these instruments has been brought to a wonderful degree of accuracy, longitude by chronometer can never be implicitly relied on; and the longer the passage, the greater the probable amount of error. Though there may be perfect agreement between two or more chronometers in the same ship, this does not prove the longitude correct, but only makes it less doubtful. And though a chronometer may run correctly for ninety-nine days, or as many passages, it may change on the hundredth, and the confidence, which it before inspired, prove the rock on which the ship and all hands are lost.

But there is a means of testing chronometers at sea, which is not unfrequently, but by no means generally, resorted to—viz., that of a lunar observation. The moon, though emblematic with the poet of all that is fickle and changeful, is, to the sailor, ever constant and true. For his use, she controls the tides; and, ever chiming to the 'harmony of the spheres' for him, at every moment, she writes with her silvery pencils in the sky, the place of his ship on the ocean. To read the writing on that blue scroll is the highest and the most beautiful accomplishment that can be practised by the mariner on the deep. Among the wonders and mighty works seen by those "that do business in great waters," there is not one more striking and grand, or more sublimely eloquent than this. An expert lunarian may always rely, within five miles, on his observation; but, allowing ten miles to be the limit within which ordinary skill will bring every one, the navigator has always within his reach, at sea, the means of detecting any error in his chronometer, beyond certain limits. Even that degree of proficiency is not difficult of attainment, which will enable him to ascertain, with a wonderful accuracy, the error of his chronometer, and even to assign for it a new rate at sea.

Do not imagine that I disparage the great body of those who navigate the ocean, or that I would underrate the attainments of our Navy officers. The latter, entering the service at fourteen or fifteen years of age, and before the groundwork of education in their young minds is completed, have difficulties in the way of their education, which none but they themselves can understand. And it is surprising, how, in the face of such difficulties, they should ever become the accomplished and intelligent officers and gentlemen, they are known to be. It too often happens that, after six years of service, there appear before the Board to be examined for promotion, Midshipmen, who are required to "work ship," manœuvre fleets, and fight battles on paper; when it is known by the Board, that many of them have never been permitted so much as to tack a ship, or to load and fire a gun. And as for the 'great body of navigators' not being properly instructed in the science of their profession, I might, by way of illustration, cite the case of one of those accomplished seamen who command the Liverpool packets of New-York. He tried the experiment of navigating by two chronometers. But they, having separate errors and rates of course, only served to confuse him, as he said, by "making a botheration in his longitude;" and as the shortest way of getting rid of this difficulty, he put one of the chronometers in his drawer and locked it up. To this day, many of the traders from Boston and New-York to the West-Indies, make their voyages without any means whatever of ascertaining longitude. On their outward-bound passage, they steer due south, till they make the latitude of their port; and then steer due west—thus sailing along the legs, instead of the hypothenuse, of a triangle. That numerous and valuable class of vessels, known under the patronymic of 'coasters,' is seldom—indeed I have never known an instance of one being—provided with any nautical book, chart, or instrument whatever, except the compass and the lead, or as they call the latter, 'the blue pigeon.' If you would see some of the practical disadvantages of their rude method of navigation, look to the Jersey shore; or go to our own Southern coast. Hundreds of wrecks strew the beach between Hatteras and Henry. And what are they, but monuments to navigators who have lost their reckoning?

A year or two ago I coasted along that shore. The beach, a few miles from Cape Henry, all the way to Cape Hatteras—I might add to Cape Lookout, but particularly to the north of Hatteras—was literally lined with wrecks. Eight or ten were often seen at one view—but never less than two or three—dotting the beach, or the foam of the breakers, with their black and riven hulls. Some lay dismasted in the edge of the rollers; some, not yet gone to pieces, were wallowing in the surf. The crew of one that had just gone ashore, were seen

pitching tents of her sails on the sand, and were endeavoring to land the cargo. Most of the wrecks had gone to pieces. But there was one—a nice little schooner—which had been thrown high and dry several yards from the water, and was standing upright in the sand, with masts and rigging complete. The little turrets that were seen from time to time peering up from behind the sand-hills, told to the fancy many a silent story of false beacons, wrecks, and plunder. The legends of the coasting trade abound in shipwrecks and “cast-aways;” in tales of false lights, murdered crews, and pillaged ships. According to these, the wreckers along some parts of our coast are as savage and as merciless as ever were those on the coast of Connaught.

Undertaking to classify the human race, and to compare the mortality incident to the followers of the different trades and professions, some one remarked, that he knew not whether to class the sailor at sea with the living or the dead. But the dangers incident to the sailor's calling, are not all owing to the winds and waves. If the immense losses of life and property that annually occur among ships could be traced to the true causes, it would be found that a large proportion of them could not be fairly ascribed to the “dangers of the sea,” but rather to reckonings lost, and bad navigation. As a work of benevolence with the humane and philanthropic, and as a matter of interest among insurance offices and merchants generally, it deserves consideration, whether some effective means may not be devised, and put in execution, for raising the standard of the merchant captain's qualifications; and for having every vessel supplied with the instruments and persons necessary for safe navigation. The subject is one, too, of national concern, and therefore commends itself also to the consideration of the patriot and statesman. With these the means are ready, simple, and economical, and would be abundantly supplied by a well-regulated school-ship. The number of pupils already proposed to be there entertained might be increased, so as to extend beyond the immediate wants of the Navy, and reach our commercial marine—supplying this last in times of peace, with a body of highly educated, well-trained, and skilful officers, who, in war, would constitute a corps of reserve for the Navy. However great may be the powers of expansion, which the Navy of such a commercial people as this may possess with regard to ships and seamen, the power of a corresponding increase, with regard to well-trained officers, is wanting; nor has the Navy been ever endowed with the means by which this power may be obtained. Six years of schooling and training are considered necessary to prepare a Midshipman for the duties of Lieutenant; and six years then must be the time, which, in any emergency, under the present system, must elapse, before any increase above the

usual ratio can take place among the commissioned officers of the Navy. In war, the merchant service would afford hundreds of vessels and thousands of seamen for the Navy. In less than one month after a declaration of war, scores of armed schooners, brigs, sloops and corvettes, superior to any vessels of their class in the last war, might be bought, equipped as men-of-war, and sent against the enemy, could the government spare from the Navy, proper officers to command them. Possessing beyond dispute the finest commercial marine in the world, is it wise entirely to neglect every course of policy, or totally to disregard every measure, which shall render available in war, the very great advantages to be derived from such a resource! The question needs no reply. Suppose that a greater number of pupils were admitted in the school-ship, and permitted at the end of six years to be examined for promotion, than should barely be sufficient to supply the Navy with its yearly quota of officers? Striking a balance between the merits and demerits of each one, let those having the greatest number in their favor be commissioned as Lieutenants in the Navy, until the yearly number of vacancies should be filled; then let certain inducements, if necessary, be held out to the others, for entering as mates and masters in the merchant service, with the understanding that they shall be received back into the Navy as Lieutenants, should a state of war, and the exigencies of the public service, render it necessary to call on them. It cannot be doubted, that the advantages of their education, their high-toned moral character and gentlemanly bearing, would soon gain for them the preference of ship owners. Without such advantages in their favor as the school-ship would give, we find half-pay officers of the Royal Navy already in the enjoyment of a like preference with the ship-owners of England. They are sought for the command of East Indiamen; they are preferred for all distant and important voyages; and we find the Great Western, and other of the English steam-packets, commanded by Navy officers, who are now becoming acquainted as pilots with our principal ports; and are acquiring a fund of information, that in war would prove most valuable to their country, and injurious to this. *Verbum sapientibus*. Ceasing then to be at an expense to the government, these school-ship officers would find employment, at once honorable and profitable to their country and themselves; they would reflect credit on the wisdom of their government; and serving, by the force of example, by their skill, and the tone of their character, to raise the standard of the ship-master's attainments, they would make still more respectable that already highly respectable class of men, and add to the safety of American ships at sea. Trained in the man-of-war school of discipline, their employment in the merchant ship, would daily increase their experience as seamen; by the

force of early habits and of education, all their predilections, whenever a state of war should interrupt them in their peaceful pursuits, would be in favor of the Navy; and to it they would naturally look for employment. By these arrangements, every man-of-war, in time of peace, may be furnished with her due quota of Midshipmen, which cannot be the case under any system, unless the yearly rate of appointments greatly exceed the yearly rate of promotions. Thus, at an expense too trifling to be taken into account, a corps of reserve of well-trained officers may be created for the Navy, and maintained in constant training ever afterwards, without the expense of a single dollar to the public treasury. Commending this subject to the reader for reflection, with the promise to enter more fully into the discussion of it at another time, let us return from the merchant service, and the "*corps of reserve*," to the Navy proper.

One of the most intelligent officers of the Navy writes: "I have written to the committee on naval affairs, to urge the necessity of a more perfect reorganization of the Navy." The letter concluded with the avowal of the conscientious belief, that "rather than the present system should continue, it were better to dismantle and sell the ships, and turn the officers adrift to seek a livelihood; for many of us feel that we are instruments, (unwilling instruments, it is true,) nevertheless we are instruments for deceiving and defrauding the public." This is by no means an uncommon sentiment, or a partial feeling among the officers. By the act of 1814-'15, a dose of slow poison was administered to the Navy. The Navy has lingered and pined under its operation, until its effects have been felt in every member of the body. Never before has the spirit of discontent, among all grades in the Navy, walked forth in the broad light of day, with half such restive but determined steps. The period is fast approaching, when something must be done to stay the evils of the deranged system. Officers, and the friends of the Navy, have forborne, until forbearance has ceased to be a virtue. They feel that to remain longer silent with the Navy in its present condition, would be but to betray the interests confided to them by their fellow-citizens.

The Navy, as at present organized, may be compared to a ship without discipline—the officers, to her crew. One Captain has been relieved by another, only to perpetuate the evils of the system. "Skulks and lazy louts," have been made the first and second Captains of the main-top. The best men in the ship have been "black listed and put in the waste" without cause. Before the crew of one gun has been properly exercised, or well drilled, the whole division is thrown into confusion—some have liberty to go on shore—some are stationed elsewhere—and others put in their places, only to be severed in like manner. All is in confusion, and there is no system in any thing on board, ex-

cept in the bad management of every thing. If a mast or a yard be sprung, the cost of repairing it is more than the expense of a new one—yet it is repaired. The most wasteful expenditures are made in some departments; and others are grossly mismanaged. The crew have remonstrated, have stated grievances and threatened exposure. But ears, as deaf as the breakers towards which they are drifting, have been turned to their entreaties. And in the face of such things, official reports continue to be made to the owners of this ship, that she is in excellent order, and in the most efficient state—that the most rigid economy, perfect management, and wholesome discipline obtain in every department—and that all's well on board. With such a picture of the Navy, Mr. Editor, does the feeling among the officers, "that they are made instruments for deceiving and defrauding the public," appear over nice, or fastidious?

In the work of reform and reorganization required for the Navy, an examination into cause and effect will show, that the slow rate of promotion under the present system is not without its evil tendencies. Of the Lieutenants, one fourth of them have been in the service a quarter of a century and more; and in that time have been only advanced a single step. The officer who is at the head of the Passed Midshipmen's list, has been in service half of that time, and has not yet been once promoted; and the officer who is at the foot of that list, has the prospect before him, of serving not less than eighteen years for his first commission. This is owing to the circumstance, that the Navy has been overstocked with Midshipmen, by appointing more in one year than can be promoted in two. But the school-ship provides a remedy for this evil. One part of the plan proposed in the economy of the school-ship, is that the supply be regulated by the demand for officers—that the number of graduates admitted thence in the Navy, be only sufficient to fill the vacancies that annually occur in the list of Lieutenants.

The number of officers in each grade ought to be regulated by law; and not left, as it now is, to the caprice and fancy of those in power. There is no law to prevent the appointment of ten thousand Midshipmen to-morrow. The Navy has become a permanent establishment, and should be regulated by fixed principles. Other nations have their naval schools, and are reaping the benefits of them. Under the superintendence of Capt. Hastings, a school of practice has been opened on board the *Excellent*, for the Royal Navy. This school was intended for Gunnery alone. Lieutenants, and other officers who have graduated in this ship, are sent to the fleet in the Mediterranean, and to other stations, that they may diffuse through the ships in commission, the advantages of a well-regulated and uniform system of training. So admirably has this plan of teaching by officers on

board a ship set apart for the purpose, succeeded, that the Admiralty are preparing to admit Captains also, as pupils in this school. If a Captain in the Royal Navy, may go to a school of practice, surely a Midshipman in the American Navy, might be sent to a school-ship, and study with profit and advantage to his country and himself, the theory as well as the practice of his profession.

Notwithstanding, that for many years, officers of the Royal Navy have had the advantage of a naval college at Portsmouth, yet such have been the improvements of late years in navigation, ship-building, surveying, and in every department of nautical science, that England now finds it expedient, not only to establish this college upon a new and more comprehensive plan, but of reëducating officers who have passed through it. Formerly the Spaniards were prëminent in hydrography. Charts constructed from old Spanish surveys, are yet considered by sailors as the most accurate charts of their day. But what was considered sufficiently accurate then, is gross and palpable error now, and would be utterly inadmissible in any survey of the present day. In one of the most important hydrographical surveys ever undertaken by any people, an argument entered into the data for calculating for the oblateness of the earth, as a spheroid, which produced an error of only *nine inches*, in the latitude and longitude of places,—not on the chart—but in actual position on the surface of the earth. In mathematics it is easier to be right than wrong; and any error that is not less than the least assignable quantity, is an error of magnitude. And this error of nine inches in the sphericity of the earth, is deemed of sufficient *magnitude* by the accomplished man of science at the head of that survey to be taken into account in the reconstruction of his charts.

It was but the other day, that the Board of Admiralty bought up at considerable expense and suppressed, on account of inaccuracy, charts of the straits of Magellan and of the coasts of Tierra del Fuego, which had been constructed from the surveys of a public expedition sent out for the purpose of surveying those straits. Well may the college at Portsmouth be remodelled; and much better may something be done for our little school-ship, or for some plan of education in the American Navy. The day has gone by, when in hydrographical surveys, it was admissible to step off a base line, on a *tolerably* level beach, and when that could not be found, to measure the height of a mast with a rope yarn, and use that measurement as the argument in calculating the base line. More is thought of inches now, than was then thought of fathoms. In the preliminary arrangements for that important national work, now in progress along our own coast under the superintendence of Mr. Hassler, highly polished steel bars of uniform temper and dimensions were used for measuring the base line. They

were first subjected to every degree of temperature between the freezing and the boiling point; and the rate of expansion noted. Every time the length of a bar was admitted in the measurement, its temperature was observed by a thermometer attached, and also noted. And acting upon the mathematical, as well as the philosophical truth, that the ends of those bars, though brought together, were not in actual contact, the space between them was at each time measured with the assistance of a nicely constructed micrometer. In the final determination of the base line, the bars were reduced to a uniform temperature, in order to obtain their standard value. And to Mr. Hassler belongs the honor of having obtained the most accurately measured base line, that has ever been determined in any country. The accuracy of this line will pervade the whole survey.

A work of such perfection is to form the standard which our officers, in their surveys, should seek to attain. But to those unaccustomed to the niceties of mathematical induction, and who have not been properly indoctrinated into the art of surveying accurately, no service can be more forbidding and unwelcome than hydrographical duty. Whereas, to the initiated, it is not only inviting, but extremely interesting and agreeable. This is a knowledge which comes not by intuition. It may be learned in the school-ship, which proposes to teach both the theory and the practice of this, as well as of every other branch of science, that pertains to the calling of a sailor. On certain days, an hour or two spent in boats on the survey of the harbor where the school-ship may be, would be a pleasant recreation to the Midshipmen of the school. Much of the time besides allotted for relaxation, should be devoted, as well for health to the body, as for profit to the mind, to the manly exercise of the seaman at the duties of his calling: among which, frequent training at the guns, firing at targets, and the like, should not be omitted.

If the school-ship were a 74, she might have a tender for two months in the year, in which the Midshipmen could take their annual cruise at sea. Indeed, this vessel might be advantageously employed the rest of the year as a practical school of seamanship for naval apprentices: a class of youth, who, if properly trained, are likely to prove an invaluable acquisition to the Navy. For an agreeable combination of the *utile cum dulce*, this cruise with the Midshipmen\* might sometimes be

\* In 1817, at the suggestion of Commodore Bainbridge (I think it was) the United States Brig Prometheus, Commander, now Commodore, Wadsworth, was sent, manned principally with Midshipmen, to cruise on the coast. They were birthed on the birth-deck, as the sailors usually are; and were required to perform all the duties of the latter, not only in handling, reefing, and steering, but in holy-stoning the decks, and cleaning the ship also. During this cruise, they surveyed Portsmouth, and several other harbors. These officers now recur to this cruise with pleasure; and allude

extended, from our own coasts, to foreign countries. The promise of a visit to the dock-yards of England and of France, would serve not merely to stimulate the pupil at his studies, but it would have its advantages in other respects. It would tend to take away from the tedium of the scholastic year, by constituting something pleasant and attractive to look forward to. It would give a zest to the holiday, and serve as a sweetener to its rough duties. To make the profession of arms agreeable to those who take them up, is one of the first duties of those with whom the power rests. The most comely feature in the economy of a well-regulated ship, or in a military corps, is that which looks to the comfort and contentment of men and officers, and which seeks to make their duties as pleasant and agreeable as the nature of the service will allow them to be. The great secret of teaching too, is to make the duties of the school-room pleasures, if possible. Besides the charm which, in the young minds of its pupils, this cruise would prove in making the school-ship agreeable, they would reap the further advantages of visiting other Navy yards than their own; of examining all improvements, and of comparing the system of others with our own. Other advantages not less real than these, would result from such cruises.

It is curious and instructive too, to look back into the maritime history of the world. Until our own day, the sailor has been considered as a being who either did not require, or could not receive, the advantages of education. For the diffusion of knowledge among seamen, less has been done by all nations, than for any other class of citizens. When the needle and the astrolabe "had weaned creeping commerce from the coward shores;" and printing, "giving wings to paper, emancipated knowledge from the cloister," Isabella encouraged the admission of books free of duty, "because, by promoting knowledge, they brought honor and profit to the kingdom." It was not till then, that the grandees of Spain began to think "letters might be no obstacle to the profession of arms;" and to send their sons to the schools of P. Martyr, tutor to the accomplished brother of broken-hearted Juana Loca. Three hundred and fifty years afterwards, the opinion of the Spanish grandees remains to be carried out in the United States of America, at least so far as it regards the profession of arms at sea. For hitherto, when asked to endow a naval school, government has replied in effect, that officers were wanted to *fight*, and that *book* learning was a thing with which a man-of-war's-man

to their time in the Prometheus, as the most pleasant and instructive period of their life of Midshipmen. As I write, there is one of them sitting near, who says that he and those who were with him, learned more of their profession during this cruise of a few months, than they had learned in years before. Taking them as a class, those of these officers who remain, are the best officers of their grade in the Navy.

had nothing to do. That sort of rude education acquired between the years of infancy and puberty—his life of hardihood, peril and adventure, may now and then fit the sailor to weave in beauty his gossamer nets of fiction, or of travel; but such qualifications enable him by no means to manage the woof and web of more substantial learning—or qualify him for the analytical and synthetical investigation of physical laws and the abstract principles of science.

In the palmy days of geographical discovery, the question was tauntingly asked by a mariner, "what have you landsmen ever discovered?" "Navigation for seamen," was the reply. And a striking exemplification of how little the minds of seamen, in all ages, have been trained by education to the inductive process of reasoning, or to scientific research, is afforded by the fact, that but few inventions in art, or discoveries in science, have originated among them. Wedded to 'old notions,' they have been slow to adopt the improvements of others, and as a class are often found far 'behind the times.'

The use of an implement, which, without the efficiency, took the place of the bee-hives of the ancients, has not been long exploded in maritime warfare. As late as the revolution, sailors have been known to attack their enemies with 'stink pots;' and when closely pressed in chase, they were wont to cut away timbers, and saw bulwarks, that their vessel might 'have play, and work;' for the notion was that a ship, like a horse, would go the faster by straining.

Within my own recollection as a sailor, it was by no means uncommon, and before that it was general, to see vessels with *bags* to their topsails, for holding wind. These bags were known under the graceful term of 'flowing reefs;' and with the wind free, they were used under the idea that the more the sails could be made to 'belly out,' the more wind was in them; and therefore the faster the ship would go. The idea that the surface of actual impingement for the propelling power of the wind, is to be measured by the area of a plane from 'clue to ear-ring,' and contained between the head and foot ropes of a sail, has been acted on only of late years. And so far from a flowing reef now, a sail fits well only when it sets as 'flat as a board.'

Looking into the history of navigation, we find that the discovery of the magnet extends back beyond the reach of history; and that tradition is doubtful as to the inventor of the mariner's compass. But the intensity apparatus, the azimuth compass, the dipping needle and the diurnal variation instrument, with a variety of magnetometers, are all modern inventions, or comparatively recent improvements, which do not owe their origin to 'them that go down to the sea in ships.' The Dip Sector is the work of Dr. Wollaston; the sex-

tant is an improvement on the quadrant, the invention of Dr. Hadley, and the most valuable instrument in modern navigation. I have seen the quadrant used on board the *Bonne Homme Richard* by Paul Jones; it resembles its type of the present day, quite as much as the Great Western and British Queen look like the offspring of Fulton's first steamer. A Frenchman, in 1500, was the first to invent port-holes to ships. Men-of-war at that time carried their guns mounted over their bulwarks, like those of a battery 'en barbet.' Before this they had a castle built forward, and another aft, as a sort of strong hold, to which the crew might retire to make their last stand. All that remains of these castles in ships of the present day, is the name; 'unde' fore-castle. Nine years after the Frenchman had made known his discovery, Henry VII had the first double-decked ship built in England. She measured a thousand tons; and though not so large as some of the Liverpool packets of the 'Dramatic' line from New-York now are, was the largest ship in the English Navy.

Sir Walter Raleigh, was among the first to argue that a powerful Navy, as a means of British independence and national glory, must needs constitute an essential feature in the policy of England. A successful courtier, and the rival of Essex and of Cecil for the favor of Elizabeth, he was counted a man of learning in his day. And though famed for "ditty and amorous odes," he found time to contribute largely to navigation. A soldier in his youth, he was sent to quell a rebellion in that 'commonwealth of common woe'—as he described Ireland. In arms he behaved most valiantly, and without following the sea as a profession, obtained from his sovereign the rank of Admiral. His feats before Cadiz and Fayal gained for him great renown. Dazzled with the splendor of a geographical fiction, he embarked for the new world, to spy out a land of 'barbaric pomp and gold,' called by the Spaniards, *El Dorado*. The warriors there were said to be female Amazons of singular prowess—and its capital to be a gorgeous city called *Manoa*, having its houses roofed with gold, and situated in the 'upper country,' on the lake *Parima*, the waters of which also rolled over their beds of golden sands. Disappointed, but not disheartened, he returned from the search, with all his bright visions flitting before him, to drag out in the tower, thirteen long and weary years of imprisonment. Here he was not idle, but employed himself perhaps more usefully than ever before. It was there that he wrote his 'History of the World,' the most remarkable work of the day. Often breaking its thread in his love for theological disquisition, we find him with zeal and earnestness engaging in the enquiry with *Polemics* concurring the locality of the 'orb of Paradise.' He gravely discusses whether the forbidden fruit were not the prickly pear, and if Noah's ark were not

lighted with a carbuncle. Turning from these subjects to his gallipots and stills, he sought recreation in a hen-house, and there compounded nostrums for the Prince of Wales, and cordials for the sick Queen of the relentless James. The 'Raleigh cordial' is said to have effected as many miraculous cures in its day, as have since been performed by the 'pills and panaceas' of more enlightened times. Released from his prison walls, he again embarks to seek the land of his golden dreams, and actually ascends the *Oronoco* a second time, in search of the gilded capital and glittering lake of *El Dorado*. Disheartened by losses and a fruitless search, the expedition is resolved into a swarm of pirates, to "look for homeward-bound Spanish men." Baffled here too, he again returns to his native land, and to prison, whence, after a short interval, he is brought to the scaffold. In the midst of such occupations, scenes and times, this man found leisure to write the first treatise that ever appeared in the English language, on naval architecture. And without having been bred to the seaman's calling, he wrote on 'the art of war at sea,' a subject, which he observes, 'has never been handled by any man, ancient or modern.' His account of the fifteen-hour fight between Sir Richard Grenville's ship, and the whole Spanish fleet of 53 sail and 10,000 men, 'more moveth the heart, than a trumpet.' After the Englishman had expended all his ammunition, he commanded his ship to be sunk, that 'nothing might remain of glory or of victory to the Spaniard.' Notwithstanding that naval architecture has been so much improved as an art—as a science—it is comparatively but little in advance of the stage at which Sir Walter left it. The rule will not work both ways—for though ships may be built from models, models cannot be built from ships. It is well known, that while the first builders in New-York will charge \$500, or \$1000 for the model of one of their favorite ships, they will allow other builders to go on board, and afford them every facility for measuring all parts of the ship, conscious that without the model and drawings which are locked up in the model-room, her like cannot be built. Under a well-regulated system of naval instruction, would this have been said?

The fact that every nation, in sending out ships on voyages of discovery, has found it expedient to furnish them with men of science from private life, is a striking comment on the system hitherto pursued by every nation in the education of nautical men. Cook, that *beau ideal* of a sailor, whose voyages have sent so many school-boys to sea, was a man of sound mind, without the advantages of learning;—Sir Joseph Banks was his 'vade mecum.' During the expedition of Captain Baudin (now Admiral!) it was discovered that the virtue of all the spare magnetic needles had been impaired

in consequence of rust. "All the articles provided by government," said he to a member of his scientific corps, as he unlocked his case of rusty needles, "are shabby beyond description. Had they acted as I could have wished, they would have given us *silver* instead of *steel* needles." This brings to mind the extravagance with which an expedition of a more modern day was fitted out. It had a *cart blanche* for its out-fits. One of our old commodores in amazement at the prodigality displayed in some of the articles, said to his Gunner of the Yard, "If you have any gold guns on charge, send them to the Exploring Expedition." I have no doubt, that under such circumstances, Captain Baudin might have been furnished with silver needles. When anything went wrong in the Expedition, the Frenchman had a way of rectifying it by "throwing his hat on deck and giving it two kicks," an expedient that is sometimes resorted to also in other Navies. His journal was filled with the most beautiful drawings, executed by one of the sailors, and is remarkable for nothing else but its wordy and barren pages.

Free-booting Lord Anson too was a strong-headed Englishman without education. "Marvellously frugal both of his speech and pen," he is said to have been "round the world, but never in it." His voyage was written by his stay-at-home companion, the accomplished Robins. Anson destroyed Payta, after having pillaged its citizens of a million and a half of dollars. He left the figure-head of his ship there, which a few years ago was to be seen standing at the corner of a square. He robbed the church; and one of his sailors gave, with a cutlass, the image of *Nuestra Señora* a gash on the cheek, which, to this day, remains as fresh and as bloody as it was at the moment when the 'Maldito Ingles' fled, horror-stricken, from her presence. The anniversary of this sacrilegious act is still retained as a feast day in the church. Once a year, the priest exhibits to a motley and superstitious crowd, the bleeding wound of Holy Virgin, "whose blood no art can quench." Anson captured the Acapulco ship, laden with the whole year's revenue of Mexico—the richest prize ever known. The story is somewhere told of his crew, when they were paid off, dressing up in cocked hats trimmed with gold lace. One of them appeared under a hat with silver trimmings. The rest were indignant at him, and were about to deal with him in no gentle terms, as a disgrace to his companions, their ship and the sea, when he explained, that there were no more gold trimmings in the place, and he had "made the man charge for this hat all the same, as though it had been trimmed with gold."

But the point in the history of this remarkable man, to which I wish to call your particular attention, is a fact which serves better than any I have cited, to illustrate the proposition stated above—

viz:—that hitherto the education of nautical men, has not been such as properly to train their minds, either to the inductive process of reasoning, or to the systematic investigation of cause and effect. Lord Anson was the first to *put in practice* a system of naval tactics, which has since been found to be the greatest improvement ever made in maritime warfare; and which alone has gained for England her celebrity on the water. I do not say *to discover*, because like the man who had been speaking prose all his life without knowing it, neither Anson nor his contemporaries appear ever to have discovered, that there was any thing remarkable or uncommon in his mode of attacking the combined squadrons in 1747. For three successive wars after this, the English officers, unmindful of Anson's *fete*, always adhered to the old plan of "preserving the line" in their fleet engagements. In all actions between single ships, the English were generally triumphant; yet, when they assembled their ships in fleets, and went into battle, it is remarkable that no decisive engagement took place during the whole course of these three wars. That "Our Hawke did bang, Monsieur Conflans" forms no exception to this remark; for the French on that occasion, not waiting to receive the attack, ran away, and were fairly overtaken and picked up by the English.

"Let any one imagine," says Clark, the expounder of the new system of tactics, "a rencontre of horsemen, where the parties, on coming to the ground appointed, had pushed their horses at full speed, exchanging a few pistol-shots as they passed one another in opposite directions, at the distance of forty or fifty yards, and then some idea may be formed of the effect of rencontres, where adverse fleets are brought to pass each other on opposite tacks." When they engaged on the same tack, the English always sought the windward—and the French, as invariably, the leeward position. The former then running down, each ship for her opposite, exposed themselves to the raking fire of the enemy, for the sake of making the action general along the whole line. In this manœuvre, the English generally suffered; and when they hauled up, so as to bring their broadsides to bear, the enemy, galling their van, would run down five or six miles to leeward, and then wait for the English to re-form, and to renew the attack. In this way it may be said, that the English did all the engaging and the French all the fighting. And if the English fleets ever captured a ship it was by accident, and in violation of their rules of fleet-fighting. It was not uncommon for fifty or sixty ships of the line, mounting 4,000 or 5,000 guns, and manned by 35,000 or 40,000 seamen, to be engaged for hours, and to separate without the loss of a ship, and sometimes without even the loss of a man.

But it generally happened, that the English fleets, in seeking the weather gage, and endeavoring to

make the action general, exposed themselves, by their manner of closing with the enemy, to a raking fire; on which occasions, if they did not come off worsted, they gained nothing of importance. Such was the affair off Minorca, in 1756, which doomed the unfortunate Byng. Pocock's, two years afterwards, in the East Indies, was no better. The same tactics prevailed in Arbuthnot's and Greaves' engagements off the Chesapeake. And on the Lakes, at a much later day, a like system had well nigh brought defeat upon the American arms. For our Perry, in his eagerness to make the action general, adhered to the old plan of "preserving the line," until his own ship had struck, and the enemy "would not have given sixpence for his squadron." Then, boarding the Niagara in an open boat, he resolved to make a desperate rally, and risk the fortune of the day upon a single cast. Dashing in that vessel, right between the Chippewa and Lady Prevost on one side,\* and the Detroit and Queen Charlotte on the other, he cut the line; and pouring in his raking broadsides right and left, in fifteen minutes he made the enemy "ours." Before this, the action had continued for three hours; the Americans had lost their flag-ship, and the English had sustained comparatively little injury. In Keppel's engagement of 1778, off Ushant—in Byron's of the following year off Granada—and in Rodney's of the year succeeding off Martinique, their fleets were manœuvred after the same code of preserving the line to make the action general. Under this system, one miscarriage at sea succeeded to another. Smarting under their effects, and wounded in pride, the whole English nation become restive from disaster. But instead of seeking the cause of the failure of her fleets, to which Anson unknowingly had long before given the clue, she cried out for the blood of guiltless officers. Admiral Byng, Anson's friend, whom he had appointed to the Mediterranean fleet, was sacrificed to appease the popular clamor—and as Voltaire said, *pour encourager les autres*. Keppel (who had been a Midshipman or Lieutenant in Anson's squadron,) was tried, and so were Matthews and other Admirals who "preserved the line."

In the midst of these national misfortunes, a landsman demonstrated for the officers the cause of their failure, and issued from the beer-shops of London a new system of naval tactics, which Anson had ignorantly practised with success thirty years before; and which being now caught at by Rodney, Duncan, Howe and Nelson, triumphantly led them on to the most glorious victories. Disdaining the trammels of the old system, they boldly dashed right into the midst of the opposing ships, broke their lines, brought down their flags, and placed the sceptre of the seas once more within the grasp of England. Her foes were dismayed, and,

in the "*guadia certaminis*" of a people made drunk with success, it was boastfully and proudly proclaimed to the world,

"The winds and seas are Britain's wide domain,  
And not a sail but by permission spreads."

The whole secret of this new mode of attack, was nothing more than the introduction of the principle on the water, which has always governed generals in their operations on the land, viz.—that of attacking the enemy in his most vulnerable point, or of gaining the advantage by throwing him into confusion. It is fully explained in one of the few productions that remain to us of Anson's "frugal pen." "Being convinced," says he—in his official account of the engagement of 1747 before alluded to—"being convinced that their whole aim was to gain time, in order to escape under cover of the night, I made signal for the whole fleet to pursue the enemy and attack them, without having any regard to the line of battle. The Centurion having got up with the *sternmost ship of the enemy began to engage her; upon which, two of the largest of the enemy's ships bore down to her assistance*. The Namur, Defiance and Windsor, (English,) being the headmost ships, *soon entered into the action*, and after *having disabled those ships in such a manner that the ships astern must come up with them, they made sail a-head to prevent the van of the enemy making an escape*."

It was on this occasion that the French commander paid the English freebooter the beautiful epigrammatic compliment, which gave rise to the remark that the "Frenchman had lost his battle to gain his point." His ship, the *Invincible*, was followed in the line by the *Gloire*. When he came on board the Admiral's ship to surrender himself a prisoner, stepping up to Lord Anson, and offering his sword, he good humoredly said, '*Monsieur, vous avez vaincu l'Invincible, et la Gloire vous suit*.'

Of the officers who were with Anson: Howe, Byron, Keppel, Hyde Parker and Saunders, afterwards commanded fleets; but it does not appear that any one of them ever thought of adopting this mode of attack, until John Clark had stated from the beer-shops aforesaid, its advantages to Atkinson, the particular friend of Lord Rodney, and to Sir Charles Douglas, his Captain of the fleet. They repeated the text, and showed the diagram to his Lordship, who, in his brilliant achievement of April 1782, was the first to give the practical demonstration of the landsman's problem for 'cutting the line.' Though the first germ of this new system was undoubtedly developed in Anson's engagement of '47, to Clark belongs the honor of giving it, in mathematical proportions, the symmetry and form of a distinct proposition; and of showing, by his theoretical deductions, the glorious advantages of its practical operation.

\* Cooper's Naval Hist. vol. II, p. 395.

And, now, sir, before I write the Q. E. D. in proof of the defects which obtained at that time in the education of nautical men, let me ask, how it came to pass, that a landsman—one who had never been to sea—should have conceived, and detailed with all the minuteness of practical operation, the best system of naval tactics that is known at this day? How is it, that this man, who had never seen a fleet ‘in line,’ should teach such men as Rodney, St. Vincent, Howe, Nelson, and a host of others, who lived in fleets—ay, the whole British navy—to manoeuvre their ships by squadrons; gallantly to lead them into battle, and victoriously to bring them out? I answer, because the system of education in the English navy was then as defective as it now is in the American—because the *book-learning* of officers generally, was not of that solid, practical kind which is required in such a profession; and which would be dispensed from our school-ship, or any other well regulated institution for the instruction of young officers.

Considering that the advantages of education are more generally diffused among all classes now than they were fifty years ago, and making the allowance due to this circumstance alone, the means of education afforded at the present day to officers of the American navy, are very much such as were enjoyed by the English officers in the time of Clark; and in support of this assertion, let us examine on this side of the Atlantic for some of the practical results of such a system. Two or three years ago, Commander —, of considerable, but by no means enviable notoriety, invented a double-flinted lock for naval ordnance, and offered to present the right of patent to the government. But strange to say the work on naval gunnery by Sir Howard Douglas (son to Rodney’s captain,)—which is a standard work in our Navy, and which has been in the hands of midshipmen as far back as my recollection extends on the subject—contains a drawing and description of a double-flinted lock very similar indeed to that of the Commander aforesaid. The difference in the descriptions of the two would hardly afford a loop on which the inventors could hang a specification for separate inventions. But it would be a waste both of your time and of my ink, Mr. Editor, to discuss the right of parentage to this invention, especially since Sir Charles Douglas, (Sir Howard’s father) who I believe was the first to try his son’s lock, has been dead for many, many years; and the lock itself has long ago gone into disuse, being replaced by the wafer and spring-hammer of modern improvement.

At the suggestion of a worthy old commodore, (*de mortuis nil nisi bonum*), an inclined plane was constructed, not a great many years ago, at one of our navy-yards, for hauling up ships for repairs. When it was finished, it possessed these remarkable advantages, viz.—it would cost about as much to get a ship up, and off this plane, as it would to

build a new ship; and a ship which was really decayed and which required repairs, could not be got up on the inclined plane at all—for none but new and strong ships could withstand the straining process to be undergone, in the operation of hauling up from the water such a mass of wood and iron. This wonderful invention had been tried in France, years before, where it likewise proved a splendid failure. A knowledge of the first principles of mechanics correctly applied, would have taught the projector of this contrivance, that its principles were at variance with the laws of philosophy, and that therefore his ideas were impracticable, and his invention a failure. But the money expended by the government in its round-about-way of arriving at such a result, would have sufficed handsomely to endow a score of schools-ships.

Some years afterwards, the same officer conceived another invention. His wants being administered to by the public treasury, the schooner *Experiment* was brought forth—a non-descript, which Jack not inaptly compared to the rhind of a water-melon cut in two, and considered a sort of sea-trap for sailors, admirably calculated for a cruise to ‘Davy Jones’ Locker.’ She was built without timbers; somewhat on the plan of Townes’ (!) bridges. But it was not sufficiently borne in mind, that though diagonally-laid scantling will make a very substantial bridge, which is stationary, it will not give the necessary strength to a ship, that is continually worked and twisted about—requiring, to withstand the force of winds and waves, all the strength that wood and iron can give. The same plan of diagonal building had been tried in England. *Experiment* there, too, had long before showed that it would afford strength barely sufficient for a frigate’s launch. And after the point was gained of building a row-boat without timbers, the plan was not found to possess any decided advantages over the usual method of building with timbers. And here, again, was uselessly expended money enough to put in operation a school-ship on the most enlarged scale. Such results as these indicate more surely, than any theory can prove, that there are defects in our system of education in the Navy. But to treat of them is an unpleasant and an ungracious office; therefore let us turn to a more pleasing picture.

The experience of every officer will sustain me in the assertion, that for the last fifteen or twenty years, the moral and intellectual condition of the Navy has been steadily advancing. And I think, upon a due examination into cause and effect, it would appear that this improvement is in a great measure owing to the establishment of libraries on board of our public vessels. Furnishing libraries to our men-of-war, is the only effectual step that has ever been taken towards education in the Navy. And for this, we are indebted to the device of another landsman, Mr. Wood—known to you Mr.

Editor, as the Philanthrope who would never be permitted to live in Siam, where it is not lawful, even for his Magnificent Highness, the King himself, to do good every day. It is this gentleman's amusement to go about doing good every where, and to all classes, in his own peculiar quiet way. He is the originator, both in this country and in England, of those excellent institutions known in our large cities as 'Mercantile Library Associations.'

In 1821, when the Franklin 74, Commodore Stewart was about to sail on a three years' cruise to the Pacific, Mr. Wood went on board, and with the permission of the Commodore, addressed the crew on the subject of procuring a library. The proposition was received with three cheers, and about \$800 were immediately subscribed by the men and officers, with which Mr. Wood procured 1500 volumes. The Commodore had an apartment set apart as a library, and appointed a librarian. One of the conditions was, that the books which remained at the end of the cruise should be placed in the hands of Mr. Wood, for the purpose of founding a library in the Brooklyn Navy-Yard. About 400 volumes were returned, which afterwards formed the nucleus around which so many valuable collections have been made in the Naval Lyceum of the New-York Navy-Yard. The Commodore on his return, bore ample testimony to the beneficial effects of the Library scheme; and through the agency of Mr. Wood, the Navy Department was induced to furnish every ship with a small Library. Perhaps, Mr. Editor, if you would invite that gentleman to the windlass, he might do something effectual in the way of procuring the establishment of a school-ship. His library plan has been silently and steadily producing its good effects. But how much more palpable and obvious would be the advantages of a well regulated school-ship.

But, lest, like the Engineer, who maintained that rivers were intended by nature only to feed canals, I be accused of advancing the opinion that ships were intended only for school-houses, I shall here let the subject rest, hoping that some abler pen will take it up. The 'scraps' which remain in the bag, relate to subjects both of grave importance and crying evil. They are reserved for the next overhauling.

H. B.

September, 1840.

## A VISIT TO STRATFORD HALL.

*Mr. Editor:*—I am of rather a melancholy temperament. For the loud mirth and merriment of festive halls I have no very strong attachment. True, I can enter the gay circles of fashion—make one of a merry group—sometimes, perhaps, plod through the giddy mazes of a dance; but then I extract from these amusements no principle of sound and healthful pleasure. Indeed, when occasion requires, I can talk, laugh, and be merry—and, for the sake of boon-com-

panionship, can lay aside my peculiar veneration for that pure, clear element, so much extolled by Pindar and the teetotallers, and drink "a health to the lass I love" in a bumper of good old Madeira; but on such occasions, believe me, sir, I feel that I am rather paying a tribute to society, than administering to my own true and substantial happiness. In none of these active, boisterous pleasures, do I find that enjoyment for which I seek—none of that elevation of spirit—of that self-oblivion—of that Lethæan water, which is so refreshing to the troubled bosom. I see little else in society than "a gallery of painted pictures."

Do not, I beseech you, Mr. Editor, after what I have said, consider me as one of those black, gloomy, misanthropic beings—dwelling in darkness and dismay—begirt with terrors, air-drawn daggers, and with demons who impair the strength of better thoughts, and seek their prey in melancholy bosoms—nor as one, who

"Deems himself predestined to a doom  
Which is not of the pangs which pass away—  
Making the sun like blood—the earth a tomb—  
The tomb a hell—and hell itself a murkier gloom;"

but rather, I beseech you, regard me as one whose slight, but bitter knowledge of the world, has taught him to look upon it with no tender eye—and who loves the smooth, unruffled stream of private life, where, in some secluded hamlet, shut out from the busy hum and jarring elements of strife, "with some fair spirit for my minister," I may pursue "the even tenor of my way, and walk the paths of peace."

"I love not man the less, but nature more;"

and, feeling and adoring that Divine Benevolence which beams in every thing, can yet find more sympathy in the mild and mellow tints of Autumn, than in the gay and gaudy hues of Spring—in the sear, yellow leaf, than in the tender bud. I have always thought that there was something in the quality of light at sunset, which has escaped the observation of philosophers. Its effect is observable in every one—even the gayest acknowledge a momentary depression. As for myself, it is at this hour—the hour of dying day—that I am most happy. I always feel a deep dejection steal over me at this moment—a kind of pleasant misery—

"A presence which disturbs me with the joy  
Of saddened thoughts—a sense sublime  
Of something far more deeply interfused,  
Whose dwelling is the light of setting suns,  
Of the round ocean, and the living air,  
And the blue sky."

If Mennon's head gave forth music at the rising, mine groans most woefully at the setting sun.

It is to this peculiarity in my constitution, together with no slight alloy of superstition, that I attribute that extreme veneration, and almost filial affection, which I feel for old and dismantled dwellings. To visit one of them in its half-ruined state—to find its little monuments of ancestral pride crumbling away—to hear the shrill chirp of the cricket in halls which once resounded to notes of mirth and revelry—to see the bramble where the woodbine grew, and the favorite rose,

"Bred with tender hand  
From the first opening bud,"

choked by the barren, noxious weed, strikes in the sensitive heart a chord, which silences whatever of boisterous joy it may contain, and substitutes in its place, a soft, sad music. And yet I love them. I look upon them with the same eyes that I do upon an aged and venerable parent; I regard them as something handed down to us from a former generation—as a relic of other days. And they teach us a useful lesson too. They afford us an ocular demonstration of that tea-